MDEQ comments on the Phase II SAP
Columbia Falls Aluminum Company Superfund Site
Columbia Falls, Montana
Prepared for Columbia Falls Aluminum Company, LLC
Prepared by Roux
Dated February 28, 2018

Responses Prepared for Columbia Falls Aluminum Company, LLC by Roux
Dated April 25, 2018

Roux responses in blue.
Revisions based on 4/19/2018 conference call provided in Green.

The DEQ has reviewed the Phase II site Characterization Sampling and Analysis Plan, dated February 28, 2918 and the CDM comments, dated April 2, 2028, on the Plan. The DEQ generally agrees with the CDM comments on the proposed phase II SAP, with the following specific emphasis:

Section 6.3.1, page 40 defined the basis for the RIFS.
The main objectives of phase II are to generate the data needed for the risk assessments and to generate the data for evaluation of remedial action options.

Section 6.3.1 will be updated to state, "The main objectives of the Phase II are to generate the data needed to conduct a baseline risk assessment and complete the RI, and to generate the data for evaluation of remedial action options in the FS."

Section 4.2, pages 16-17 well defines the specific tasks involved in phase II.

The extensive RI, phase I data base should allow significant screening of COPCs and COPECs with final screening as part of the risk assessments when the phase II data is available.

Roux agrees that following the collection of the Phase II data, the RI dataset should allow for significant screening of COPCs and COPECs as part of the risk assessments. COPC and COPEC screening will not be performed as part of the Phase II, but as part of the risk assessment.

It is understood that all monitoring wells (old and New) will be sampled twice as part of phase II.

Roux has no comment.

Section 4.6 describes the installation of seven new monitoring wells. The DEQ recommends two additional wells to better define potential impacts on the western residential area (one midway between MW-057 and MW-059 and one 700 feet North of MW-057); the DEQ recommends three additional wells to better define the nature and extent of the cyanide/fluoride plume (one midway between MW-045 and MW-047, one 500 feet West of MW-054, and one 500 feet Northeast of MW-037). Thus 12 new wells (seven recommended by ROUX and five recommended by DEQ) would be installed, developed, and sampled.

In response to MDEQ's comments, USEPA conducted an analysis of the five proposed well locations. USEPA provided their analysis to Roux in an e-mail on April 12, 2018. The USEPA analysis is provided in the red italicized text below:

"Section 4.6 describes the installation of seven new monitoring wells. The DEQ recommends two additional wells to better define potential impacts on the western residential area

- *one midway between MW-057 and MW-059*
  - *Not necessary. Proposed well CFMW-069 will serve to monitor GW quality between these wells. Also, the current understanding of GW flow at the facility shows that the direction of inferred flow is in the SE'ly direction toward the river. Proposed CFMW-069 will assist in improving GW flow definition in this area.*
- *one 700 feet North of MW-057*
  - *Not necessary. Current understanding of GW flow direction is to the SE in the vicinity of CFMW-057. Also, wells in the CFMW-056 cluster, CFMW-057 cluster, and CFMSW-059 cluster have been ND for cyanide, and below the fluoride MCL during all monitoring rounds. The caveat here is that the -057 cluster lacks a well screened in the upper hydrogeologic zone – Roux has proposed a well completed in this zone (CFMW-057B) as part of the Phase II investigation. If this well showed impacts, an up/cross-gradient well to the north would become valuable.*

The DEQ recommends three additional wells to better define the nature and extent of the cyanide/fluoride plume

- *one midway between MW-045 and MW-047,*
  - *Limited value – could add definition to the 200 µg/L cyanide contour and 2000 µg/L fluoride contour. That being said, concentrations in the CFMW-045 and CFMW-047 well clusters remained fairly consistent over the 4 sampling rounds presented in the GW-SW Report.*
- *one 500 feet West of MW-054*
  - *Valuable - would add definition to the westerly extent of the cyanide and fluoride plumes proximal to Flathead River.*
- *one 500 feet Northeast of MW-037)*
  - *Potentially valuable – would definition to the easterly extent of the cyanide and fluoride plumes up and cross-gradient to the main plant area. This location came up during discussion in the joint EPA/DEQ/CFAC technical meeting as potentially valuable, but likely difficult to install."*

Roux generally agrees with the above analysis provided by USEPA. However, Roux believes that the proposed monitoring well, CFMW-068, as shown in the Phase II SAP, will add definition to the westerly extent of the cyanide and fluoride plumes proximal to Flathead River such that the well requested 500 feet west of MW-054 has limited value and is not necessary.

As USEPA notes in their comment, the area northeast of CFMW-037 was discussed during the technical meeting. It was discussed that this area is captured by an upgradient well (CFMW-035) and multiple down gradient wells (CFMW-037, 47, 49, 49a, 50) that capture the groundwater quality in that general area. Also, as noted in USEPA's comment, this area would be difficult to install a well based on the steep elevation changes east of the building. The area immediately east of the Main Plant Building is actively utilized during demolition such that well installation would interfere with demolition operations. Based on these considerations Roux believes the well northeast of MW-037 has limited value and is not necessary.

As previously stated, Roux believes that the existing and proposed well network described in the Phase II SAP is comprehensive and addresses MDEQ's spatial concerns in their comments. No additional wells are proposed for installation at this time.

CFAC/Roux propose to install the "valuable" well (i.e. 500 feet West of MW-054). Roux agrees that this well, along with the seven wells proposed in the Phase II SAP, will add definition to the cyanide and fluoride plume. The Phase II SAP will be updated to include this additional well in the monitoring well network.